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09/757,361	01/08/2001	Mathieu Tallegas	40032/JEJ/X2	6623

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ALCATEL INTERNETWORKING, INC.
ALCATEL-INTELLECTUAL PROPERTY DEPARTMENT
3400 W. PLANO PARKWAY, MS LEGL2
PLANO, TX 75075

EXAMINER	
NG, CHRISTINE Y	
ART UNIT	**PAPER NUMBER**
2663	11

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/757,361	Applicant(s) TALLEGAS ET AL.	
	Examiner Christine Ng	Art Unit 2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 January 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 January 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7 & 8*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 5, 7, 9-12, 14, 16, 27, 29, 31, 33, 35, 37, 39, 41 and 42 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,636,480 to Walia et al.

Referring to claims 1, 5, 27, 29, 33, 37, 41 and 42, Walia et al disclose in Figure 7 a packet switching controller comprising:

An input (Flow Classifier 704) for receiving a packet. The flow classifier 704 "takes incoming packets and classifies the packets by flow" (Column 9, lines 3-4).

A policing element (Flow Classifier 704 and Rule Selector 706) for classifying the packet into a plurality of policeable groups (Traffic Control Units 708-722). After the flow classifier 704 classifies a flow, the rule selector 706 "maps a flow to a particular traffic control rule or chain of traffic control rules"; the traffic control rules (TCR) are implemented by the traffic control units 708-722. Refer to Column 9, lines 4-20.

Wherein the packet is compared against one or more bandwidth contracts (maximum allowable bandwidth) defined for the policeable groups (Traffic Control Units

708-722) to produce one or more policing results. The traffic control units 708-722 "regulate the flows according to the bandwidth limits of the respective traffic control rule". Refer to Column 9, lines 21-34. Refer to Figures 4-6 for examples.

Referring to claims 3, 7, 31, 35 and 39, Walia et al disclose in Figure 4 that the policing results include one or more disposition recommendations (from TCR1, Step 406 and TCR3, Step 412), and making the disposition decision for the packet using the policing results and at least one other disposition recommendation. If the TCR1 was not violated by data packet A or if data packet A violated TCR1 but was not dropped, the final disposition of data packet A is determined by mapping it to TCR3 to determine final disposition recommendation. Refer to Column 5, line 53 to Column 6, line 9.

Referring to claim 9, Walia et al disclose in Figures 3 and 4 a method for policing a data packet received by a data communication switch, the method comprising:

Classifying (Figure 4, Steps 406 and 412) the data packet (A) into a plurality of policeable groups (Figure 3, TCR1 and TCR3). Refer to Column 5, lines 53-56 and Column 6, lines 1-6.

Identifying policing data (maximum allowed bandwidth) associated with one or more policeable groups (Figure 3, TCR1 and TCR3). TCR1 limits flow rate to 10Mb/s and TCR3 limits flow rate to 20 Mb/s. Refer to Column 4, lines 37-44.

Applying (Figure 4, Steps 408 and 428) the policing data to produce (Figure 4, Steps 410, 412, 430 and 432) one or more policing results for the policeable group (TCR1 and TCR3). It is determined whether or not the rate of flow A exceeds the allocated bandwidth of TCR1 (Step 408) and the allocated bandwidth of TCR 3 (Step

428). The packet is then forwarded (Steps 412 and 430) or dropped (Steps 410 and 432) accordingly. Refer to Column 5, lines 56-67 and Column 6, lines 49-56.

Recommending a disposition of the data packet from the policing result. At steps 412 and 430, the packet is forwarded if the packet does not violate the bandwidth allocation. At steps 410 and 432, the packets violated the bandwidth allocation and may be dropped, have its priority reduced or have its TOS changed. Refer to Column 5, lines 56-67 and Column 6, lines 49-56.

Referring to claim 10, Walia et al disclose that a particular policeable group (TCR) identifies a type of application to be policied. In Figure 3, TCR1 polices flows of Type X, from Src A to Dest B; TCR2 polices flows of Type X, from Src C to Dest D; and TCR3 polices flows of Type X. Refer to Column 4, lines 26-44. Refer to Figures 5 and 6 for other examples of TCRs policing only specific groups of flows.

Referring to claim 11, Walia et al disclose that the policing data (maximum allowed bandwidth) includes information on bandwidth constraints specified for at least one policeable group (TCR). Refer to Figure 3 where each TCR 302, 304 and 306 have an maximum allowed bandwidth of 10Mb/s, 15 Mb/s and 20 Mb/s, respectively.

Referring to claim 12, Walia et al disclose that the policing results indicate whether the data packet is to be forwarded. "If traffic control rule 3 is not violated by a flow A packet, then the flow A packet is forwarded to a next location" (Column 6, lines 49-51).

Referring to claim 14, Walia et al disclose that the policing results indicate whether the data packet is to be dropped. "If traffic control rule 3 is violated by a flow A

packet, then the appropriate violated action is taken" which includes "dropping the packet" (Column 6, lines 51-54).

Referring to claim 16, Walia et al disclose that the step of recommending a disposition comprises selecting one of the policing results as the recommended disposition. If the disposition of TCR1 for data packet A is not selected as the recommended disposition (data packet A violated TCR1 but was not dropped), it may also need to be regulated by further traffic control rules (TCR3) for the final disposition. Refer to Column 6, lines 1-9. Furthermore, a flow may be mapped to any number of traffic control rules. Refer to Column 5, lines 46-52.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2, 6, 18-21, 23, 25, 28, 30, 34 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,636,480 to Walia et al in view of U.S. Patent No. 6,542,508 to Lin.

Referring to claims 2, 6, 18, 28, 30, 34 and 38, Walia et al disclose in Figure 3 the method of:

Applying a first policeable group identifier ("from Src A to Dest B") to retrieve first policing data (TCR1; maximum allowed bandwidth = 10 Mb/s) and a second policeable

group identifier ("Type X"). Flows (A) of Type X and from source A to destination B are limited to 10Mb/s of bandwidth. Refer to Column 4, lines 26-40.

Producing a first policing result using the first policing data (TCR1; maximum allowed bandwidth = 10 Mb/s). If the TCR1 is not violated by flow A, the packet is mapped to the next rule. If the TCR1 is violated by flow A and the packet A is not dropped, the packet is also mapped to the next rule. Refer to Column 6, lines 1-9.

Applying the second policeable group identifier ("Type X") to retrieve second policing data (TCR3; maximum allowed bandwidth = 20 Mb/s). Flows of Type X, regardless of source and destination, are limited to 20 Mb/s. Refer to Column 4, lines 41-46.

Producing a second policing result using the second policing data (TCR3; maximum allowed bandwidth = 20 Mb/s). Data packet A is next applied to TCR3 to determine whether it is to be forwarded or dropped. Refer to Column 6, lines 49-53.

Walia et al do not disclose that the policing information is stored in a database.

Lin discloses in Figure 3 that information for traffic policing is stored in a policy database 202. In a network, the policy-based application examines every packet coming in the network and "compares it against flow classification criteria, and performs the necessary actions based upon the policies defined in a policy database" (Column 1, lines 29-31). The policy database, accessible to policy-based applications, stores policies defined by network managers to describe network traffic behaviors, specifically: what traffic is to be to controlled (flow classification 203a) and how the traffic is to be controlled (action specification 203b). Refer to Column 3, lines 26-34. Therefore, it

would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the policing information is stored in a database, the motivation being so that network managers can specify what traffic is to be controlled and how the traffic is to be controlled and make the information accessible to all applications; thereby facilitating traffic control in a network.

Referring to claim 19, refer to the rejection of claim 10.

Referring to claim 20, refer to the rejection of claim 11.

Referring to claim 21, refer to the rejection of claim 12.

Referring to claim 23, refer to the rejection of claim 14.

Referring to claim 25, refer to the rejection of claim 16.

5. Claims 4, 8, 32, 36 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,636,480 to Walia et al in view of U.S. Patent No. 6,452,933 to Duffield et al. Walia et al do not disclose that the policing results are combined into a single result by taking a worst case policing result.

Duffield et al discloses that in order to determine which queue in a connection to service first, worst case fairness is implemented. The time interval between a packet serviced at a first time and a packet serviced at a second time must be less than a value determined by the packet size of the longest queue; the longest queue will experience the longest end-to-end delay. This will ensure that the servicing of the queues will be admitted even in during the longest possible delay. Refer to Column 5, lines 35-45. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the policing results are combined into a single result

by taken a worst case policing result, the motivation being that by taking in the worst case result, it will ensure that all other policing results will be satisfied even in during delay.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,636,480 to Walia et al in view of U.S. Patent No. 5,339,332 to Kammerl. Walia et al do not disclose that the policing results indicate whether the data packet is eligible to be dropped.

Kammerl discloses that in an ATM system, when the negotiated bit rate of connection is exceeded, the excess ATM cells are eliminated. However, it is also "possible to mark the excess ATM cells such that they can still be subsequently eliminated in the network as low-priority ATM cells in case traffic jams arise" (Column 1, lines 61-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that that the policing results indicate whether the data packet is eligible to be dropped, the motivation being that so that in case of congestion, all excess packets that have not been dropped can be dropped; thereby freeing more bandwidth for the necessary packets.

7. Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,636,480 to Walia et al in view of U.S. Patent No. 5,568,468 to Ogasawara et al.

Referring to claim 15, Walia et al disclose that the step of recommending a disposition comprises the step of combining the policing results to make a recommendation.

Ogasawara et al disclose in Figure 1 the step of recommending a disposition comprises the step of combining the policing results (from Monitor Circuits 11a-11n) to make a recommendation. Each of the monitor circuits 11a-11n "outputs a monitor result representing whether the arriving cell violates the declared value of the traffic parameter" (Column 7, lines 12-15) to the determination circuit 13. The determination circuit 13 then determines whether to pass or discard the cell based on the combined results of monitor circuits 11a-11n. Refer to Column 7, lines 12-36 and Column 8, lines 9-31. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the step of recommending a disposition comprises the step of combining the policing results to make a recommendation, the motivation being that when deciding whether to pass or discard a cell, many different traffic parameters, such as peak cell rate or average cell rate, as measured by each of the traffic monitors may be accounted for in determining the final disposition of the cell; thereby ensuring a more complete traffic profile.

Referring to claim 17, Walia et al do not disclose the step of updating the policing data based on the recommended disposition.

Ogasawara et al disclose in Figure 1 that based on the final determination result of the packet, the determination circuit 13 determines whether to update the traffic parameter (current traffic state) of the traffic parameter table 40. The monitor circuits 11a-11n determines whether or not an arriving cell violates a traffic parameter in accordance with the permissible traffic value and the current traffic state read from the traffic parameter table 40. Refer to Column 7, lines 12-36. Therefore, it would have

been obvious to one of ordinary skill in the art at the time the invention was made to include the step of updating the policing data based on the recommended disposition, the motivation being that the decision on the disposition of future cells depends on the disposition of the current cell, since accepting or discarding a current cell can affect traffic parameters such as cell rate and cell frequency.

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,636,480 to Walia et al in view of U.S. Patent No. 6,542,508 to Lin, and in further view of U.S. Patent No. 5,339,332 to Kammerl. Refer to the rejection of claim 13.

9. Claims 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,636,480 to Walia et al in view of U.S. Patent No. 6,542,508 to Lin, and in further view of U.S. Patent No. 5,568,468 to Ogasawara et al.

Referring to claim 24, refer to the rejection of claim 15.

Referring to claim 26, refer to the rejection of claim 17.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (703) 305-8395. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nguyen Chau can be reached on (703) 308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng CN
May 25, 2004

CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600